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## PATENT SPECIFICATION



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### PROVISIONAL SPECIFICATION

#### Improvements in or relating to Ticket Delivery Devices

We, BRECKNELL, MUNRO AND ROGERS (1928) LIMITED, a British Company, of Pennywell Road, in the City and County of Bristol, and HENRY JAMES DOLMAN, a 5 British subject of 72, Church Road, Staple Hill, in the City and County of Bristol, do hereby declare the nature of this invention to be as follows:—

This invention relates to ticket delivery 10 devices and has for its object to provide such a device that shall present a protruding ticket ready for easy removal by the purchaser, and in which the liability to jam or get out of action by accidental 15 misuse shall be reduced to the minimum.

According to the invention there is provided, in front of the ticket separating device, a pair of rollers which are positively driven so as to feed forward the ticket so 20 that it protrudes from the front of the rollers but is held therebetween, said rollers being free to be moved forward independently of said positive drive to facilitate the removal of the protruding 25 ticket by the purchaser.

The rollers may be yieldably mounted, in which case positive stop means are preferably provided to limit the opening of the rollers so as to prevent the insertion 30 of a coin therebetween.

The ticket separating device may act to feed forward a continuous strip, and separate therefrom a portion that constitutes the ticket. Alternatively the 35 ticket separating device may act to feed forward tickets one by one from a pile.

The ticket delivery device may be set 40 into action by the insertion of a coin by the purchaser, or alternatively it may be under the control of a ticket clerk.

In one form of the invention, as applied to a coin controlled ticket delivery machine, the tickets are provided from a roll of blank paper or cardboard that is fed between printing cylinders to print the 45 ticket. After printing, the front end of the roll constituting the foremost printed ticket portion, is fed in between two rollers preferably of brass. These rollers are spring mounted and are positively driven 50 through gearing that is operated conjointly with the drive of the printing cylinders. These rollers thus rotate and feed forward the foremost printed ticket portion, and simultaneously cutting mechanism is actuated to cut off said ticket portion from the subsequent printed ticket portion and the remainder of the roll. 55

The ticket is thus fed forward between the brass rollers until it projects therefrom by most of its length, its rear part being gripped between said rollers which then come to rest.

Ratchet and pawl devices are provided in the driving means for the rollers which 65 permit them moving forward independently. Thus when the purchaser grasps the ticket, it is easy for him to remove it from between the rollers, which freely rotate to permit such removal.

Abutment means are provided that prevent the rollers being opened to such an extent that the insertion of a coin therebetween is possible.

Dated this 24th day of November, 1937.

C. G. R. ELDON,  
Chartered Patent Agent,  
East Street, Bedminster,  
Bristol.

### COMPLETE SPECIFICATION

#### Improvements in or relating to Ticket Delivery Devices

We, BRECKNELL, MUNRO AND ROGERS (1928) LIMITED, a British Company, of Pennywell Road, in the City and County of Bristol, and HENRY JAMES DOLMAN, a British subject, of 72, Church Road, Staple Hill, in the City and County of Bristol, do hereby declare the nature of this invention and in what manner the

same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to devices for delivering tickets, and has for its object to provide such a device that shall present a protruding ticket ready for removal by the purchaser, and in which the liability 90

to jam or get out of action by accidental misuse shall be reduced to the minimum.

The present invention consists in a device for delivering tickets from a continuous strip, in which said strip is fed forward to a pair of rollers and then cut to separate the foremost portion to provide a ticket, said rollers being rotated forwardly by driving mechanism to feed forward the ticket so that it protrudes from the front of the rollers but is held therebetween, and said rollers being free to rotate forwardly independently of said driving mechanism to facilitate the removal of the ticket by the purchaser.

The present invention further consists in a device for delivering tickets from a continuous strip comprising a pair of feeding cylinders, one of which is provided with a blade for cutting off the front portion of the strip to provide a ticket, a pair of rollers arranged to receive the ticket thus fed forward, and driving mechanism for imparting rotation to the rollers to feed forward the ticket gripped between them so that it protrudes beyond the front of the rollers but is held therebetween, said rollers being free to rotate forwardly independently of said driving mechanism to facilitate the removal of the ticket by the purchaser.

The device may be set into action or freed for action by the insertion of a coin by the purchaser, or alternatively it may be under the control of a ticket clerk.

A constructional form of the invention is diagrammatically indicated in the accompanying drawings in which:-

Fig. 1 is a longitudinal section of a ticket feeding device that forms part of a ticket delivery machine for feeding tickets obtained by cutting a continuous roll.

Fig. 2 is a cross section of Fig. 1, taken on the line 2—2 of Fig. 1.

Referring to the drawings—The ticket delivery device in accordance with the invention comprises a casing 1 within which are rotatably mounted a roller 2 and also feeding cylinders 3, 4. The cylinders 3, 4 are respectively rigid with two interengaging toothed wheels 5, 6.

The cylinder 4 is smooth through part of its circumference 7, but the remainder 8 of said circumference is knurled at the edges as indicated at 9 and 10 Fig. 2. The cylinder 3 carries an inset blade 11. The toothed wheel 6 engages a train of pinions, 12, 13, 14, the latter two of which are loosely mounted upon spindles 15, 16, which are forced together by means of springs 17 and 18. The spindle 15 fits closely within suitable holes in the casing 1, while the spindle 16 fits within larger holes 19, 20 in the casing so as to allow of a limited up and down movement.

Loosely mounted on the spindles 15, 16 are rollers 21, 22, said rollers respectively carrying pawls 23, 24 which are engaged by corresponding ratchet wheels 25, 26 which are respectively rigid with the pinions 13, 14. The casing 1 also carries a pair of plates 27, 28 providing a channel between them for a purpose to be herein-after described, and the front of the casing is shaped to provide an open mouth 29.

The device above described constitutes part of a ticket delivery machine and it is understood that the toothed wheel 6 is driven from the other parts of the machine, a slot 30 being provided in the casing 1 to allow of said drive projecting into the casing sufficiently to engage said toothed wheel 6.

31 indicates a continuous strip of paper, cardboard, or the like that provides the tickets. In the drawings this continuous strip passes between a pair of ticket printing wheels (not shown) and is guided by the roller 2 so that it is led in between the cylinders 3, 4, but in a convenient construction the printing wheels are located to the right of the casing 1 (as seen in Fig. 1) so that the run of the printed tickets is horizontal. The figure shows the device in the position when a ticket 32 is ready for removal. It will be observed that this ticket 32 is gripped towards its rear end by the rollers 21, 22 and it is easily removable by the purchaser since the rollers 21, 22 rotate freely as the ticket 32 is pulled away due to the pawls 23, 24 slipping over the teeth of the ratchet wheels 25, 26 so that the latter are not required to move.

In order to effect delivery of the next ticket ready for removal into the position previously occupied by the ticket 32, the necessary coin or coins are inserted (or if the machine is not coin controlled a handle or the like is actuated by the ticket clerk) and the result of either of these operations is that the printing wheels are rotated to feed forward and print upon a portion of the continuous strip 31 and simultaneously the wheel 6 is rotated by the driving mechanism, above referred to, in the counterclockwise direction through one revolution. This acts to rotate the cylinder 3 through one revolution in the clockwise direction, and through the train of pinions 12, 13, 14, the latter two of which are respectively rigid with the spindles 15, 16, the rollers 21, 22 are rotated in the counterclockwise and clockwise directions respectively. During the first half revolution or so of the cylinders 3, 4 the strip 31 lies between the smooth parts of said rollers without being gripped thereby and thus the strip does not move, subsequently however the knurled portions 9, 10 of the cylinder 4 come into contact with the strip 31 and press said strip closely against the

cylinder 3 so that said strip is gripped between the cylinders 34 and fed forward by about half their circumference.

The forward end of the strip passes into 5 the gap between the plates 27, 28 and is thus guided so that it enters between the rollers 21, 22 which then take up the feed. During the latter stage, the blade 11 of the cylinder 3 acts to cut off the forward end 10 of the strip 31 to produce the next ticket, and said ticket is then fed forward into the position 32 as above described ready for removal by the purchaser. The remaining portion of the strip 31 is then left with its 15 forward end located between the plates 27, 28 as indicated in the drawings.

It will be observed that due to the 20 rollers 21, 22 being yieldably pressed together, said rollers come into close contact when the ticket 32 is removed and this prevents the insertion of coins, cardboard or the like.

Having now particularly described and ascertained the nature of our said invention 25 and in what manner the same is to be performed, we declare that what we claim is:—

1. A device for delivering tickets from a continuous strip, in which said strip is 30 fed forward to a pair of rollers and then cut to separate the foremost portion to provide a ticket, said rollers being rotated forwardly by driving mechanism to feed forward the ticket so that it protrudes 35 from the front of the rollers but is held therebetween, and said rollers being free

to rotate forwardly independently of said driving mechanism to facilitate the removal of the ticket by the purchaser.

2. A device for delivering tickets from 40 a continuous strip comprising a pair of feeding cylinders, one of which is provided with a blade for cutting off the front portion of the strip to provide a ticket, a pair of rollers arranged to receive the ticket 45 thus fed forward, and driving mechanism for imparting rotation to the rollers to feed forward the ticket gripped between them so that it protrudes beyond the front of the rollers but is held therebetween, said 50 rollers being free to rotate forwardly independently of said driving mechanism to facilitate the removal of the ticket by the purchaser.

3. A device for delivering tickets from 55 a continuous strip as claimed in any of the preceding claims, in which the rollers are yieldably pressed together and when the ticket is removed come into close contact so as to prevent the insertion of coins, 60 cardboard or the like.

4. The improved device for delivering 65 tickets from a continuous strip, constructed and operating substantially as hereinbefore described and as illustrated in the accom- panying drawings.

Dated this 9th day of July, 1938.

C. G. R. ELDON,  
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East Street, Bedminster,  
Bristol.

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*[This Drawing is a reproduction of the Original on a reduced scale.]*

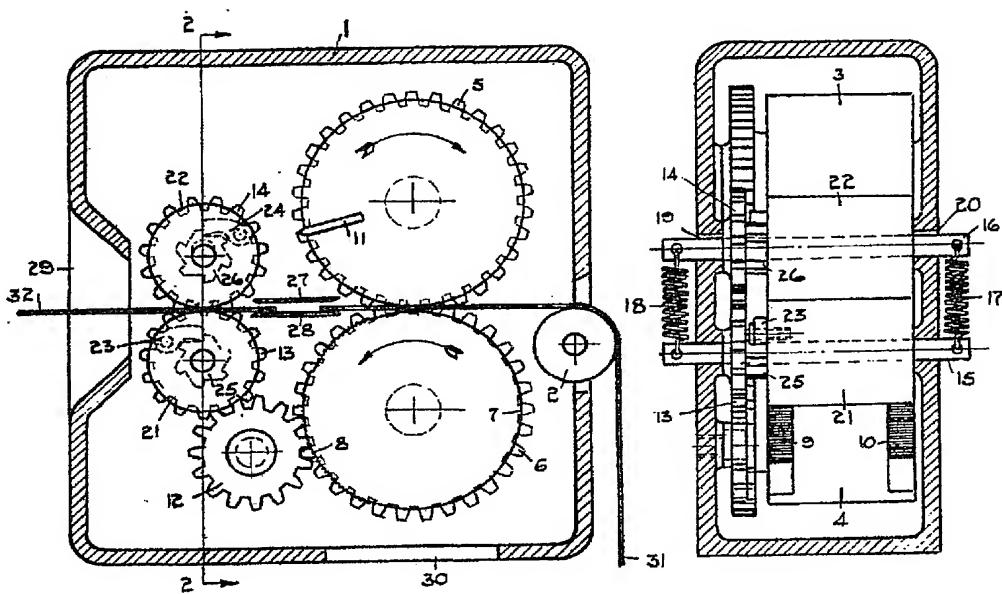


FIG. 1

FIG. 2

Malby &amp; Sons, Photo-Lith.